

~~Please amend claim 2 as follows:~~

~~2. (Amended) A capacitance type sensor comprising:
a substrate;
a group of fixed electrodes provided on an upper face of said substrate;
a movable electrode plate having an electrode on a lower flat face thereof, said movable
electrode plate having a rubber elasticity, and wherein
said substrate is provided with at least a layer of one of conductive elastomer, conductive
paint and conductive adhesive material, in which said layer supports said movable electrode plate
and said thickness of said layer provides a gap between said group of fixed electrodes on said
substrate and said electrode on said movable electrode plate.~~

IN THE TITLE:

~~Delete the title and substitute therefor:~~

~~--A VARIABLE CAPACITANCE TYPE INPUT DEVICE--.~~

REMARKS

Applicant has amended claims 1 and 2 and the title. Applicant respectfully submits that these amendments to the claims and title are supported by the application as originally filed and do not contain any new matter. Accordingly, the Office Action will be discussed in terms of the claims and title as amended.

The Examiner has stated that the title is misdescriptive and requested a new title. Applicant has provided a new title which is descriptive of the invention.

The Examiner has rejected claims 1-4 under 35 USC 103 as being obvious over Applicant's admitted prior art of Fig. 7 or Kaneo in view of Berstis or Sato, stating that Applicant's admitted prior art discloses a capacitance type including a substrate 90, a group of fixed electrodes (Dx, Dy, Dz) provided on an upper face of the substrate 90, a movable electrode plate D having an electrode on a lower face thereof, a gap provided between the group of fixed electrodes Dx, Dy, Dz on the substrate 90 and the electrode on the movable electrode plate D, but does not mention the term solder or the term conductive elastomer; Kaneo discloses a device similar to Applicant's admitted prior art which discloses all of the limitations of claim 1 with the exception of describing the term solder and the conductive elastomer layer, but the limitation

solder reads on the copper clad formed between the fixed electrode 314 and movable electrode 302 (see col. 6, line 66 through col. 7, line 4) and is so broad that it even reads on portion 94 in Applicant's admitted prior art of Fig. 7; Sato's device is similar to Berstis which teaches conductive layer of elastomer 45A formed between fixed electrodes 31, 33, 34 and movable electrode 47; and it would have been obvious to one of ordinary skill in the art to substitute a solder layer as taught by Berstis or Sato to the portion 94 of the prior art admitted by Applicant so as to simplify a variety of operating functions as the same time with reduction in size, thickness and weight.

In reply thereto, Applicant would like to first point out that the inventor's own prior original work cannot be cited as part of the prior art to show that his later invention is obvious under 35 USC 103 (see In re Plenddemann, 15 USPQ 2d 1738 (CAFC 1990)). Also, Applicant respectfully submits that absent a statutory bar under 35 USC 102(b), (c) or (e), Applicant's own prior art cannot be prior art to him (see In re Faut, 213 USPQ 532 (CCPA 1982)).

With the above case decisions on mind, Applicant would like to point out that at page 1, lines 6-8, it states:

"The capacitance type sensor shown in Fig. 7 is developed by the inventors of the present application and a patent has been filed in Japan."

Applicant respectfully submits that this statement clearly indicates that what is shown in Fig. 7 is the work of the inventors of the present application. In addition, Applicant would like to point out that the application which was filed in Japan and which represents that which is shown in Fig. 7 of Applicant's application was also filed in the U.S. and has matured into U.S. Patent No. 6,373,265. It is clear on its face that this patent (a copy of which is enclosed) has the same inventors as the present invention, the same assignee as the present invention and was filed in the U.S. February 2, 2000, only six days before the present application was filed in Japan, namely February 8, 2000 upon which convention priority is claimed.

In view of the above, therefore, Applicant respectfully submits that that which is shown in Fig. 7 cannot be prior art to show that the present invention is obvious. In addition, Applicant respectfully submits that what is shown in Fig. 7 of Applicant's application is not a statutory bar under 35 USC 102(b), (c) or (e). Accordingly, Applicant respectfully submits that that which is shown in Fig. 7 is not admitted prior art and cannot be utilized by the Examiner as a rejection of the invention of the present application and should be withdrawn.

Notwithstanding the above, Applicant respectfully submits that what is shown in Fig. 7 does not suggest or show the use of solder or the conductive elastomer, paint or adhesive material, as is admitted by the Examiner, and further provides a more complex structure than the present invention.

Applicant has further carefully reviewed Kaneo and respectfully submits that Kaneo discloses a structure for a strain gauge and in Kaneo the base portions 5a, 5b, 5c and 5d are always laid on the mounting plate 1 (see col. 4, lines 55-56) and the control member 2 has a single body in a three-dimensional form. On top of the control member 2, in order to obtain uniform bending of the beam portions 4a, 4b, 4c and 4d, the length L of the base portion and the height H of the beam portions must be changed according to respective conditions (see col. 4). In addition, Applicant respectfully submits that Kaneo teaches nothing about a capacitive sensor or input device and merely teaches that the input device uses strain gauges which provide a variable resistance. As a result, Applicant respectfully submits that Kaneo is based on a resistive variation and teaches away from Applicant's invention.

Applicant has further carefully reviewed Berstis and respectfully submits that the only thing which is provided between the fixed electrode 314 and the movable electrode 302 is the adhesive 312 which is essentially an elastomeric adhesive such as a silicon adhesive and is not copper clad. In addition, it is this adhesive in Berstis which sets the spacing in the gap between the fixed electrodes 314 and the movable electrode 302 and this adhesive is clearly not-conductive. Still further, Applicant respectfully submits that the capacitance in Berstis is varied by deforming the adhesive since the disk 302b is rigid and preferably made from metal (see col. 6, line 21) and does not have rubber elasticity. As a result, the capacitance of Berstis is varied by tilting the disk 302b and deforming the adhesive 312 and disk 302b does not have the required rubber elasticity of Applicant's movable electrode plate.

In addition to the above, Applicant has carefully reviewed Sato and respectfully submits that Sato was filed June 12, 2000, while Applicant's application contains a foreign priority date of February 8, 2000 and is therefore before the filing date in the U.S. of Sato. Applicant has previously filed his claim for foreign priority together with a certified copy of the application upon which priority is based. If required, Applicant will file an English language translation of the priority document. As a result, Applicant respectfully submits that Sato is not prior art and should be withdrawn.

Notwithstanding the above, Applicant respectfully submits that Sato is quite different from Applicant's invention and particularly describes a multi-directional operating switch which includes a dome-like circular movable contact 45 made of a thin resilient metal sheet which easily deforms and restores as a result of its resiliency. However, it is the deformation of this element 45 due to the force applied thereto from the shaft 46 which allows the shaft 46 and electrode to come in contact with each other and create an ON state and the resiliency of element 45 returns the shaft 46 back to its normal position and causes the OFF state. Accordingly, Applicant respectfully submits that Sato does not show or suggest anything concerning capacitive sensors or capacitive input devices.

In view of the above, therefore, Applicant respectfully submits that which is shown in Fig. 7 of Applicant's application and Sato should be withdrawn by the Examiner and not used as prior art. Still further, Applicant respectfully submits that in view of Applicant's arguments above that not only is the combination suggested by the Examiner not Applicant's invention, but the combination suggested by the Examiner is not suggested by the art. As a result, Applicant respectfully submits that claims 1-4 are not obvious over that which is shown in Fig. 7 or Kano in view of Berstis or Sato.

Attached hereto is a marked-up version of the changes made to the claims and title by the current amendment. The attached page is captioned "Version with markings to show changes made."

Applicant further respectfully and retroactively requests a two month extension of time so as to respond to the Office Action. Please charge Deposit Account No. 11-1445 in the sum of \$410.00 as the fee.

In view of the above, therefore, it is respectfully requested that this Amendment be entered, favorably considered and the case passed to issue.

Please charge any additional costs incurred by or in order to implement this Amendment or required by any requests for extensions of time to KODA & ANDROLIA DEPOSIT ACCOUNT NO. 11-1445.

Respectfully submitted,

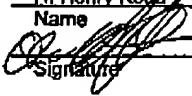
KODA & ANDROLIA

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H. Henry Koda
Name

2/26/2003
Signature Date

Application No. 09/778,527

VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A capacitance type sensor comprising[;]:
a substrate;
a group of fixed electrodes provided on an upper face of said substrate;
a movable electrode plate having an electrode on a lower flat face thereof, said movable
electrode plate having a rubber elasticity; and wherein
[a gap provided between said group of fixed electrodes on said substrate and said
electrode on said movable electrode plate, said gap being formed with a solder layer provided on
said substrate] said substrate is provided with at least a solder layer having a thickness, in which
said layer supports said movable electrode plate and said thickness of the layer provide a gap
between said group of fixed electrodes on said substrate and said electrode on said movable
electrode plate.

Claim 2 has been amended as follows:

2. (Amended) A capacitance type sensor comprising[;]:
a substrate;
a group of fixed electrodes provided on an upper face of said substrate;
a movable electrode plate having an electrode on a lower flat face thereof, said movable
electrode plate having a rubber elasticity; and wherein
[a gap provided between said group of fixed electrodes on said substrate and said
electrode on said movable electrode plate, said gap being formed with one of a conductive elastomer
layer, a conductive paint layer and a conductive adhesive material layer provided on said
substrate] said substrate is provided with at least a layer of one of conductive elastomer,
conductive paint and conductive adhesive material, in which said layer supports said movable
electrode plate and said thickness of said layer provides a gap between said group of fixed
electrodes on said substrate and said electrode on said movable electrode plate.

IN THE TITLE:

Delete the title and substitute therefor:

-A VARIABLE CAPACITANCE TYPE INPUT DEVICE--